Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

The invention claimed is:

1. (currently amended) A process for remediating soil contaminated with hydrocarbons, including:

desorbing the hydrocarbon contaminants from a bed of the soil by thermal desorption in a ~~treated~~ desorption chamber and thereafter combusting the contaminants in a thermal oxidiser;

wherein combustion air for said desorption chamber and said thermal oxidiser, and said desorbed contaminants prior to admission to said thermal oxidiser, are preheated by heat exchange with offgases from the thermal oxidiser;

and wherein, after said heat exchange with said combustion air and said desorbed contaminants, said offgases from the thermal oxidiser are rapidly quenched to below 200°C.

2. (original) A process according to claim 1, wherein said offgases preheat the combustion air first and then the desorbed contaminants.

3. (currently amended) A process accordingly to claim 1, wherein excess preheated air is vented during treatment of ~~higher contaminated~~ soil with high hydrocarbon contamination levels.

4. (previously presented) A process according to claim 1, wherein the heat exchange is conducted in a heat exchanger having metal heat exchange surfaces and wherein the metal surface temperatures are maintained above 500°C and below 700°C.

5. (original) A process according to claim 4, wherein the heat exchanger is arranged for co - current flow.

6. (previously presented) A process according to claim 1, wherein the hot gas flow through both the combustion air and contaminants heat exchanges is controlled.

7. (previously presented) A process according to claim 1, wherein the separated contaminants are treated in said thermal oxidiser in at least two stages, including a combustion stage in which the contaminants are combusted with a first supply of combustion air at a substantially adiabatic temperature in the range 900 - 1200°C, and a second stage in which a second supply of combustion air is admitted for combustion of residual compounds and for controlling the offgas outflow temperature.

8. (previously presented) A process according to claim 1, wherein desorbed contaminants in gaseous form are at least in part combusted within said desorption chamber by controlled admission of air into said chamber above said bed to effect such combustion.

9. (currently amended) Apparatus for remediating soil contaminated with hydrocarbons, including:

a first furnace ~~means~~defining a desorption chamber in which a bed of said soil ~~may be~~is treated to separate the hydrocarbon contaminants from the soil by thermal desorption;

a second furnace ~~means~~ for combusting said hydrocarbon contaminants by thermal oxidation;

~~means~~respective ducts for conveying combustion air to said desorption chamber and to said second furnace ~~means~~, and for conveying the desorbed contaminants from the ~~absorption~~desorption chamber to the second furnace[[means]];[[and]]

a heat exchange ~~means arranged~~configuration for preheating said combustion air and said desorbed contaminants by heat exchange with offgases from the second furnace means; and

a quenching module for rapid quenching of said offgases to below 200°C after said heat exchange with said combustion air and said desorbed contaminants.

10. (currently amended) Apparatus according to claim 9, wherein the heat exchange [[means]]configuration is ~~arranged in~~a series configuration so that said offgases preheat the combustion air first and then the desorbed contaminants.

11. (currently amended) Apparatus according to claim 9, wherein the heat exchange ~~means~~configuration is directly installed in the hot gas duct at the offgas outlet end of the second furnace[[means]].

12. (currently amended) Apparatus according to claim 11, wherein the heat exchange [[means]]configuration is arranged for co-current flow.

13. (currently amended) Apparatus according to claim 11, wherein the leading tube bank of the heat exchange [[means]]configuration incorporates variable tube spacing to facilitate said direct installation.

14. (currently amended) Apparatus according to claim 9, further including an energy dump valve from the heat exchange [[means]]configuration for venting of excess preheated air.

15. (currently amended) Apparatus according to ~~any one of~~ claim 9, wherein the heat exchange [[means]]configuration includes a hot gas by-pass and damper system ~~in either or both the offgas duct~~ or by-pass duct to control hot gas flow through both the combustion air and contaminants heat exchangers.

16. (original) Apparatus according to claim 15, wherein the heat exchanger for the contaminants is adapted to be made reversible depending on operating conditions.

17. (currently amended) Apparatus according to claim 9, wherein said second furnace ~~for thermal oxidation~~ includes at least two stages including a combustion stage in which the contaminants are combusted with a first supply of combustion air at a substantially adiabatic temperature in the range 900 - 1200°C, and a second stage in which a second supply of combustion air is admitted for combustion of residual compounds and for controlling the offgas outflow temperature.

18. (currently amended) Apparatus according to claim 9, further including:

[[means]]a control device for controlled admission of air into said desorption chamber above said bed to effect in the said chamber at least partial combustion of said desorbed contaminants in gaseous form; and

[[means]]a duct for conveying the products of said at least partial combustion to said second furnace for further combustion therein.

19.-39. (cancelled)

40. (new) A process according to claim 1, wherein said rapid quenching is by injection of ambient air.

41. (new) A process according to claim 40, wherein said ambient air is injected by an ejector powered by said offgases.

42. (new) A process according to claim 1, wherein a proportion of offgases from the thermal oxidiser bypasses said heat exchange with said combustion air and said desorbed contaminants and is subjected to said rapid quenching to below 200°C.

43. (new) A process according to claim 1, wherein a small proportion of the preheated combustion air bypasses said quenching to provide reheating of the quenched offgases.

44. (new) Apparatus according to claim 9, wherein said quenching module comprises an ambient air injection device.

45. (new) Apparatus according to claim 44, wherein said ambient air injection device comprises an ejector powered by said offgases.

46. (new) Apparatus according to claim 9, further comprising a duct that bypasses said heat exchange configuration to said quenching module for conveying a proportion of offgases from the thermal oxidiser direct to the quenching module.

47. (new) Apparatus according to claim 9, further comprises a duct arranged whereby a small proportion of the preheated combustion air bypasses said quenching to provide reheating of the quenched offgases.

48. (new) Apparatus according to claim 10, wherein the heat exchange configuration is directly installed in the hot gas duct at the offgas outlet end of the second furnace.

49. (new) Apparatus according to claim 10, wherein the heat exchange configuration is arranged for co-current flow.

50. (new) A process for remediating soil contaminated with hydrocarbons, including:

desorbing the hydrocarbon contaminants from a bed of the soil by thermal desorption in a desorption chamber and thereafter combusting the contaminants in a thermal oxidiser; wherein offgases from the thermal oxidiser are utilised to preheat process feed gases by heat exchange with the offgases and are thereafter rapidly quenched to below 200°C.

51. (new) A process according to claim 50, wherein the heat exchange is conducted in a heat exchanger having metal heat exchange surfaces and wherein the metal surface temperatures are maintained above 500°C and below 700°C.

52. (new) A process according to claim 51, wherein the heat exchanger is arranged for co – current flow.

53. (new) A process according to claim 50, wherein the separated contaminants are treated in said thermal oxidiser in at least two stages, including a combustion stage in which the contaminants are combusted with a first supply of combustion air at a substantially adiabatic temperature in the range 900 - 1200°C, and a second stage in which a second supply of combustion air is admitted for combustion of residual compounds and for controlling the offgas outflow temperature.

54. (new) A process according to claim 50, wherein said rapid quenching is by injection of ambient air.

55. (new) A process according to claim 54 wherein said ambient air is injected by an ejector powered by said offgases.

56. (new) A process according to claim 50, wherein a proportion of offgases from the thermal oxidiser bypasses said heat exchange and is subjected to said rapid quenching to below 200°C.

57. (new) Apparatus for remediating soil contaminated with hydrocarbons, including:

a first furnace defining a desorption chamber in which a bed of said soil is treated to separate the hydrocarbon contaminants from the soil by thermal desorption;

a second furnace for combusting said hydrocarbon contaminants by thermal oxidation;

a heat exchange configuration of preheating furnace feed gases by heat exchange with the offgases; and

a quenching module for rapid quenching of said offgases to below 200°C after said heat exchange with furnace feed gases.

58. (new) Apparatus according to claim 57, wherein the heat exchange configuration is directly installed in the hot gas duct at the offgas outlet end of the second furnace,

59. (new) Apparatus according to claim 58, wherein the heat exchange configuration is arranged for co-current flow.

60. (new) Apparatus according to claim 58, wherein the leading tube bank of the heat exchange configuration incorporates variable tube spacing to facilitate said direct installation.

61. (new) Apparatus according to claim 57, wherein said second furnace includes at least two stages including a combustion stage in which the contaminants are combusted with a first supply of combustion air at a substantially adiabatic temperature in the range 900 – 1200°C, and a second stage in which a second supply of combustion air is admitted for combustion of residual compounds and for controlling the offgas outflow temperature.

62. (new) Apparatus all to claim 57, wherein said quenching module comprises an ambient air injection device.

63. (new) Apparatus all to claim 62, wherein said ambient air injection device comprises an ejector powered by said offgases.

64. (new) Apparatus all to claim 57, further comprising a duct that bypasses said heat exchange configuration to said quenching module for conveying a proportion of offgases from the thermal oxidiser direct to the quenching module.

65. (new) A process according to claim 1, wherein said rapid quenching is carried out in less than 750ms.

66. (new) Apparatus according to claim 9, wherein said quenching module is arranged to carry out said rapid quenching in less than 750ms.

67. (new) A process according to claim 50, wherein said rapid quenching is carried out in less than 750ms.

68. (new) Apparatus according to claim 57, wherein said quenching module is arranged to carry out said rapid quenching in less than 750ms.